

MACHIDA
Appl. No. 09/957,461
April 25, 2005

REMARKS/ARGUMENTS

Reconsideration of this application is respectfully requested.

The Examiner's attention is called to the attached copy of applicant's IDS filed April 5, 2002 and the accompanying Form PTO-1449. A copy of the postcard receipt acknowledging receipt of these papers by the USPTO is also attached. If the Examiner cannot find a copy of the published documents, then it is requested that the undersigned be telephoned as soon as possible so that duplicate copies can be supplied immediately.

The Examiner is respectfully requested to be sure that all such art has been considered and to return a fully initialed copy of the Form PTO-1449 to that same effect.

As requested, the Abstract and specification have been amended to correct minor errors and/or to improve the format so as to be consistent with USPTO practice. Similarly, the dependency of claim 9 has been corrected.

Accordingly, all outstanding formal issues are believed to have been resolved in the applicant's favor.

The rejection of claims 1-5, 8 and 13-18 under 35 U.S.C. §102 as allegedly anticipated by Margosian '315 is respectfully traversed.

Margosian '315 teaches a thin static magnetic field which could be as thin as only twice the thickness of the maximum available slice dimension (e.g., see column 3, lines 59-64). Accordingly, this appears to be a species of prior art already described in applicant's

specification which does not involve true multi-slice MRI (e.g., involving simultaneous selective excitation of a plurality of slices, i.e., another slice is excited before an earlier excited slice becomes relaxed). Nor does Margosian '315 appear to have any teaching to permit oblique imaging of multiple slices while an object is moving obliquely with respect to a slice selection axis. In short, Margosian '315 is not believed to be any more relevant than the prior art generally described in the applicant's specification. More particularly, independent claims 1, 14 and 21 each include features that Margosian '315 (and all other cited references) fail to teach or suggest. For example, each of these independent claims require the following features:

- (a) a first region (of plural regions within imaging range) being excited at intervals a plurality of times while in the predetermined imaging range; and
- (b) at least one other region also being excited during a period between said intervals.

For example, refer to applicant's Fig. 2, which, in an exemplary embodiment, demonstrates that:

- (a) first region (e.g., ne=3) is excited at intervals a plurality of times (e.g., 16 times) in the predetermined imaging range (refer to a range between the upper and lower lateral lines); and
- (b) at least one other region (e.g., ne=1 and 2: two slices) is also excited during a period between the intervals at which the first region (e.g., ne=3) is excited.

That is, within a fixed imaging range through which an object on a couch passes (is moved), each of a plurality of regions (multiple slices) is spatially tracked so that the same

region (each region) is magnetically excited several times (i.e., 16 times as in Fig. 2). During repeatedly exciting one region (new-3 in Fig. 2) at intervals, one or more other regions (ne-1 and 2 in Fig. 2) are excited as well. Thus each region is excited intermittently, while the other region(s) are excited in an interleaved (e.g., multi-slice) manner.

In contrast, Margosian '315 fails to teach such an excitation scheme. Margosian '315 discloses one scheme in column 2, lines 39-43, which teaches that "a patient is moved longitudinally and continuously through the thin imaging volume and images from a plurality of slices are generated sequentially as the patient moves to create a volume image representation." However, the intermittent multi-slice excitation scheme of the applicant's claims is not anticipated and is not suggested by the teachings by Margosian – or any of the other cited references.

The rejection of claims 6, 9 and 18 under 35 U.S.C. §103 as allegedly being made "obvious" based on Margosian in view of Kuhn '636 is also respectfully traversed.

Fundamental deficiencies of Margosian have also been noted above with respect to parent claims. Kuhn '636 does not supply such deficiencies. Accordingly, even if it is assumed *arguendo* Kuhn might be relevant to additional recitations of these dependent claims, there is no present need to address issues of whether there is any suggestion in either reference for the alleged combination or whether even the combined teachings of these references actually do or do not teach or suggest the added features of these dependent claims when considered in isolation.

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Similarly, the rejection of claims 7, 10 and 19 under 35 U.S.C. §103 as allegedly being made “obvious” based on Margosian in view of Hajnal ‘478 is also respectfully traversed.

Once again, for reasons noted just above with respect to other dependent claims, it is not believed necessary at this time to address the deficiencies of this alleged combination of references.

The rejection of claim 11 under 35 U.S.C. §103 as allegedly being made “obvious” based on Margosian in view of Pipe ‘088 is also respectfully traversed.

For reasons already noted above with respect to other dependent claims, it is not believed necessary at this time to discuss the possible deficiencies of this combination of references.

The rejection of claim 12 under 35 U.S.C. §103 as allegedly being made “obvious” based on Margosian in view of Miyamoto ‘305 is also respectfully traversed.

Once again, because the fundamental deficiencies of the primary Margosian reference have already been noted with respect to a parent claim, it is not believed necessary at this time to discuss the additional deficiencies of this alleged combination.

Attention is also drawn to new claims 20-25. It will be noted that independent claim 20 includes distinguishing features already noted above with respect to the primary Margosian reference.

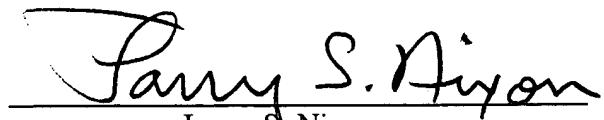
Accordingly, this entire application is now believed to be in allowable condition and a formal Notice to that effect is respectfully solicited.

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Respectfully submitted,

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